

Mr. Duane Kaiser
A. O. Smith/UPPCO
302 N. Sixth St.
Monticello, IN 47960-1839

Re: MPM181-11863-00036
Second Minor Revision to
FESOP F181-7394-00036

Dear Mr. Kaiser:

A. O. Smith/UPPCO was issued a permit on April 26, 1999 for electric motor manufacturing. A letter requesting changes to this permit was received on February 3, 2000. Pursuant to the provisions of 326 IAC 2-8-11.1 a minor permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The modification/amendments to the FESOP consists of the following elements:

1. The melt capacity of the aluminum melting furnaces, collectively referred to as unit 17, should be changed from a combined melt capacity of 225.6 lbs/hr of aluminum metal to 2,025 lbs/hr (225 lbs/hr per furnace).

2. The allowable PM emission limit indicated in Section D.1.1 needs to be recalculated using the actual combined melt capacity of the (9) furnaces, which is 2,025 lbs/hr.

$$4.10 * 1.013^{0.67} = 4.14 \text{ lbs PM/hr (allowable)}$$

3. In section D 2.1, the term "thermal oxidizer" should be changed to "carbon adsorption system".

4. The coating VOC content should be corrected in Section D 2. 1 from 5.85 lbs VOC/gal to 5.59 lbs. VOC/gal to reflect the current "as-applied" coating's VOC content. This was measured by Method 24 during testing conducted at the facility in October 1999. The results of this testing were sent to IDEM December 10, 1999.

5. The minimum overall control efficiency (MOCE) needed to comply with 326-IAC 8-2-9 has been recalculated by A. O. Smith/UPPCO to reflect the current VOC content. A.O. Smith/UPPCO has calculated this to be 78.5% (IDEM concurs with the calculations submitted with this application). Therefore the FESOP should be amended from the current (MOCE) 82.36% to 78.5% . This change affects the following sections of the FESOP: D.2.1; D.2.2; and D.2.5.

6. A new exhaust stack was constructed to allow for the stack testing of one (1) of the aluminum melt furnaces. The stack is identified as S-11 and is included on revised forms GSD-02 and GSD-04.

7. The existing carbon adsorption control device system has been replaced by a improved model that should decrease emission and is an insignificant change. FESOP Form CE-03 and the Preventive Maintenance Plan have been revised to reflect the changes to the carbon adsorption control device system.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the minor permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact R. Joe Crawford, OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call at (800) 451-6027, press 0 and ask for R. Joe Crawford or extension (3-0431), or dial (317) 233-0431.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments

RJC

cc: File - White County
U.S. EPA, Region V
White County Health Department
Air Compliance Section Inspector - Eric Courtright

A.O. Smith/UPPCO
Monticello, Indiana

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Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

**FEDERALLY ENFORCEABLE STATE
OPERATING PERMIT (FESOP)
and ENHANCED NEW SOURCE REVIEW
OFFICE OF AIR MANAGEMENT**

**A.O. Smith / UPPCO
302 North Sixth Street
Monticello, Indiana 47960**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 and 326 IAC 2-1-3.2, as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: F181-7394-00036	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: April 26, 1999

First Administrative Amendment 181-11054, issued on July 23, 1999
First Minor Permit Revision 151-11233-00036, issued on September 16, 1999

Second Minor Permit Revision 181-11863-00036 Pages Affected: 6,28,29	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary electric motor manufacturing operation.

Responsible Official: Duane Kaiser
Source Address: 302 North Sixth Street, Monticello, Indiana 47960-1839
Mailing Address: 302 North Sixth Street, Monticello, Indiana 47960-1839
SIC Code: 3621
County Location: White
County Status: Attainment for all criteria pollutants
Source Status: Federally Enforceable State Operating Permit (FESOP)
Minor Source, under PSD or Emission Offset Rules;
Minor Source, FESOP Program

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) nine (9) aluminum melting furnaces, collectively referred to as unit 17, each with a maximum heat input capacity of 0.4 million British thermal units per hour, with a combined melt capacity of 225.6 pounds per hour of aluminum metal;
- (b) two (2) dip tanks, referred to as unit 22, constructed in 1994, with a maximum capacity of 1.3 gallons of coating per hour, used for varnish coating of electric motor coils and stators, with a carbon adsorption system used for VOC control;
- (c) one (1) degreasing operation, referred to as unit 24, constructed in 1994, using 3400 gallons of 849 solvent per year, for degreasing metal brackets;
- (d) one (1) degreaser, referred to as unit 21, constructed in 1994, using 1650 gallons of Carbo-Sol (trichloroethylene) per year, used for degreasing motor shafts.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (1) natural gas-fired combustion units;
- (2) combustion source flame safety purging on startup;
- (3) machining where an aqueous cutting coolant continuously floods the machining interface;
- (4) the following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment;
- (5) replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (6) paved and unpaved roads and parking lots with public access;
- (7) grinding and machining operations;
- (8) mold release agents using low volatile products;
- (9) spray painting rotors with zinc chromate primer;

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Permit Revision to a Federally Enforceable State Operating Permit

Source Background and Description

Source Name:	A.O. Smith / UPPCO
Source Location:	302 North Sixth Street, Monticello, Indiana 47960
County:	White
SIC Code:	3621
Operation Permit No.:	F 181-7394-00036
Operation Permit Issuance Date:	April 26, 1999
Permit Revision No.:	181-11863-00036
Permit Reviewer:	R. Joe Crawford

The Office of Air Management (OAM) has reviewed a revision application from A.O. Smith / UPPCO relating to the operation of an electronic motor manufacturing facility.

History

On February 3, 2000, A.O. Smith / UPPCO submitted an application to the OAM requesting that the following revisions be made to their FESOP:

Section D.1

1. The melt capacity of the aluminum melting furnaces, collectively referred to as unit 17, should be changed from a combined melt capacity of 225.6 lbs/hr of aluminum metal to 2,025 lbs/hr (225 lbs/hr per furnace).

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) nine (9) aluminum melting furnaces, collectively referred to as unit 17, each with a maximum heat input capacity of 0.4 million British thermal units per hour, with a combined melt capacity of ~~225.6~~ **2025** pounds per hour of aluminum metal;

The facility description box for Section D.1 will also change.

2. The allowable PM emission limit indicated in Section D.1.1 needs to be recalculated using the actual combined melt capacity of the (9) furnaces, which is 2,025 lbs/hr. OAM is in concurrence with the re-calculations provided by A. O. Smith, which is 4.14 lbs/hr.

$$4.10 * 1.013^{0.67} = 4.14 \text{ lbs PM/hr (allowable)}$$

D.1.1 Particulate Matter (PM) and Particulate Matter less than ten microns (PM10) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter emissions from the aluminum melting operation shall not exceed ~~0.95~~ **4.14** pounds per hour.

This limitation is based on the following equation:

Interpolation and extrapolation of the data for the process weight less than sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.1 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Section D.2

3. In section D 2.1, the term "thermal oxidizer" should be changed to "carbon adsorption system".

4. The coating VOC content should be corrected in Section D 2. 1 from 5.85 lbs VOC/gal to 5.59 lbs. VOC/gal to reflect the current "as-applied" coating's VOC content. This was measured by Method 24 during testing conducted at the facility in October 1999. The results of this testing were sent to IDEM December 10, 1999.

5. The minimum overall control efficiency (MOCE) needed to comply with 326-IAC 8-2-9 has been recalculated by A. O. Smith/UPPCO to reflect the current VOC content. A.O. Smith/UPPCO has calculated this to be 78.5% (IDEM concurs with the calculations submitted with this application). Therefore the FESOP should be amended from the current (MOCE) 82.36% to 78.5% . This change affects the following sections of the FESOP: D.2.1; D.2.2; and D.2.5.

D 2 1 Volatile Organic Compounds

When operating the carbon adsorber to achieve the limit for rule 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), 3.5 pounds VOC emitted to the atmosphere per gallon of coating less water delivered to the ~~applicator~~ **applicator**, the carbon adsorber shall maintain a minimum overall efficiency of 78.5% percent. The efficiency and the use of the ~~thermal oxidizer~~ **carbon adsorber** are required by rule 326 IAC 8-1-2(a)(1). Based upon 326 IAC 8-1-2(c) and the overall control efficiency of the carbon adsorber of 78.5% percent, the VOC content of the coating applied shall not exceed ~~5.85~~ **5.59** pounds VOC per gallon of coating less water delivered to the applicators.

D 2 2 Hazardous Air Pollutants

The hazardous air pollutant emissions shall be limited as follows:

The input of hazardous air pollutants to the varnish coating operation and the usage of cleanup solvent for the varnish coating operation shall be limited to ~~4.24~~ **2.03** tons of any combination of HAPs, including coatings, dilution solvents, and cleaning solvents, per 12 consecutive month period. This limitation is based upon the usage of a carbon adsorber with a minimum overall efficiency of ~~82.36~~ **78.5** percent. Therefore, the requirements of 326 IAC 2-7 (Part 70) do not apply.

D 2 5 Carbon Adsorber [326 IAC 2-8-5]

The carbon adsorber shall operate at a minimum overall efficiency of ~~82.36~~ **78.5** percent at all times that the varnish coating process is in operation. The operation of this control device at this minimum efficiency is necessary in order to ensure compliance with 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), and also to ensure that the total HAPs emissions from the varnish coating operation are limited to ~~4.24~~ **2.03** tons per 12 consecutive month period.

6. A new exhaust stack was constructed to allow for the stack testing of one (1) of the aluminum melt furnaces. The stack is identified as S-11 and is included on revised forms GSD-02 and GSD-04. No resulting permit changes.

STACK SUMMARY					
S/V ID #	Unit	Height	Dimension	Flow Rate	Gas Temp
S-1-S-8	Wall Vent	23'	24" dia	9860	70°
S-9	Wall Vent	22'8"	10" dia	6000	190°
S-10	Laminators	16'	18" dia	3,060	70°
S-11	Furnace 2	37'	16" dia	3,600	140°

7. The existing carbon adsorption control device system has been replaced by a improved model that should decrease emission and is an insignificant change. FESOP Form CE-03 and the Preventitive Maintenance Plan have been revised to reflect the changes to the carbon adsorption control device system.

Existing Approvals

- 1.The source was issued a FESOP 181-7394-00036 on April 26, 1999.
- 2.The source was issued a First Administrative Amendment 181-11054-00036, on July 23, 1999
- 2.The source was issued a First Minor Modification 181-11233-00036, on September 16, 1999.

Recommendation

The staff recommends to the Commissioner that the Minor Permit Revision be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 3, 2000.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A of this document. (1 page)

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The potential to emit of the equipment is as follows:

Pollutant	Potential To Emit (tons/year)
PM	19.1
PM-10	11.5
SO ₂	4.0
VOC	4.08
CO	0.0
NO _x	3.4

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of VOC is less than 25 tons per year; therefore this new equipment does not require a significant permit revision pursuant to 326 IAC 2-8-11.1(f).

(b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of VOC is greater than 5 tons per year but less than 25 tons per year; and this source is required to use air pollution control equipment to comply with the applicable provisions of 326 IAC 8; therefore the installation of this new equipment requires a minor permit revision pursuant to 326 IAC 2-8-11.1(d).

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/ facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
shaft degreasing	0.00	0.00	0.00	7.99	0.00	0.00	7.99
varnish coating dip tanks	0.00	0.00	0.00	5.88 3.18	0.00	0.00	4.24 2.03
bracket degreasing	0.00	0.00	0.00	8.98	0.00	0.00	6.28
rotor coating	1.85	1.85	0.00	6.03	0.00	0.00	3.20
rust inhibitor coating	0.00	0.00	0.00	1.68	0.00	0.00	1.68
aluminum melting	2.10 19.1	1.30 11.5	0.00 4.0	0.00 0.9	0.00	0.00 3.4	0.00
natural gas combustion units	0.00	0.00	0.00	0.00	0.10	0.40	0.00
trim presses & lamination stations	0.0	0.0	0.0	11.0	0.0	0.0	0.0
Total Emissions	3.95 20.95	3.15 13.35	0.00 4.00	30.56 39.76	0.10	0.40 3.80	23.39 21.18

County Attainment Status

The source is located in White County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. White County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Parts 61 and 63) applicable to this source.

State Rule Applicability - Entire Source

There are no changes in State rule applicability for the entire source from the original FESOP.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.

Conclusion

The operation of these facilities shall be subject to the conditions of the attached proposed FESOP minor permit revision No. 181-11863-00036.